

QVQLVQSGAEVKKPGASVKVSCKASGYTFTGYWIEWVRQAPGQGLEWMGEI
LPGSGTTNYNEKFKGRVTMTRDTSTSTVYMELSSLRSEDTAVYYCARADYYGS
DYVKFDYWGQGTLVTVSS

FIG. 1A

DIQMTQSPSSLSASVGDRVTITCKASQHVGTHVTWYQQKPGKAPKLLIYSTSY
RYSGVPSRFSGSGSGTDFTLTISSLQPEDFATYYCQHFYSYPLTFGGGTKVEIK

FIG. 1B

QVQLVQSGAEVKKPGASVKVSCKASGYTFTGYWIEWVRQAPGQGLEWMGE
WLPGSGTTNYNEKFKGRVTMTRDTSTSTVYMELSSLRSEDTAVYYCARADYY
GSDYVKFDYWGQGTLVTVSS

FIG. 2A

DIQMTQSPSSLSASVGDRVTITCKASQHVGTHVTWYQQKPGKAPKLLIYSTSY
RYSGVPSRFSGSGSGTDFTLTISSLQPEDFATYYCQHFYSYPLTFGGGTKVEIK

FIG. 2B

QVQLVQSGAEVKKPGASVKVSCKASGYTFTYYWIEWVRQAPGQGLEWMGEWL
PGSGTTNYNEKFKGRVTMTRDTSTSTVYMELSSLRSEDTAVYYCARADYYGSD
HVKFDYWGQGTLVTVSS

FIG. 3A

DIQMTQSPSSLSASVGDRVTITCASQHVGTHVTWYQQKPGKAPKLLIYGTSY
RYSGVPSRFSGSGSGTDFTLTISLQPEDFATYYCQHFDYDYPLTFGGGGTKVEIK

FIG. 3B

QVQLVQSGAEVKKPGASVKVSCKASGYTFTGYWIEWVRQAPGQGLEWMGE
WLPSGSGTTNYNEKFKGRVTMTRDTSTSTVYMELSSLRSEDTAVYYCARADYY
GSDHVKFDYWGQGTLVTVSS

FIG. 4A

DIQMTQSPSSLSASVGDRVTITCKASQHVGTHVTWYQQKPGKAPKLLIYGTSY
RYSGVPSRFSGSGSGTDFTLTISLQPEDFATYYCQHFEYPLTFGGGGTKVEIK

FIG. 4B

QVQLVQSGAEVKKPGSSVKVSCKASGGTFSGYWIEWVRQAPGQGLEWMGEI
LPGSGTTNYNEKFKGRVTITADESTSTAYMELSSLRSEDTAVYYCARADYYGS
DYVKFDYWGQGTLVTVSS

FIG. 5A

DIQMTQSPSSLSASVGDRVTITCKASQHVGHVTVWYQQKPGKAPKLLIYSTSY
RYSGVPSRFSGSGSGTDFTLTISLQPEDFATYYCQQFYEYPLTFGGGTKVEIK

FIG. 5B

QVQLVQSGAEVKKPGSSVKVSCKASGGTFSGYWIEWVRQAPGQGLEWMGEI
LPGSGTTNPNEKFKGRVTITADESTSTAYMELSSLRSEDTAVYYCARADYYGS
DYVKFDYWGQGTLVTVSS

FIG. 6A

DIQMTQSPSSLSASVGDRVTITCKASQHVGHVTVWYQQKPGKAPKLLIYSTSY
RYSGVPSRFSGSGSGTDFTLTISLQPEDFATYYCQQFYEYPLTFGGGTKVEIK

FIG. 6B

QVQLVQSGAEVKKPGSSVKVSCKASGGTFSGYWIEWVRQAPGQGLEWMGEI
LPGSGTTNYNEKFKGRVTITADESTSTAYMELSSLRSED~~TAVYYCARADYYGS~~
DYVKFDYWGQGTLVTVSS

FIG. 7A

DIQMTQSPSSLSASVGDRVTITCKASQHV~~GTHVTWYQQKPGKAPKLLIYGTSY~~
RYSGVPSRFSGSGSGTDFTLTISSLQPEDFATYYCQQFYEYPLTFGGGKVEIK

FIG. 7B

QVQLVQSGAEVKKPGSSVKVSCKASGGTF~~SY~~YWIEWVRQAPGQGLEWMGEI
LPGSGTTNPNEKFKGRVTITADESTSTAYMELSSLRSED~~TAVYYCARADYYGS~~
DYVKFDYWGQGTLVTVSS

FIG. 8A

DIQMTQSPSSLSASVGDRVTITCKASQHVITHVTWYQQKPGKAPKLLIYGTS
YSYSGVPSRFSGSGSGTDFTLTISSLQPEDFATYYCQQFYEYPLTFGGGKVEIK

FIG. 8B

7F3com-2H2 V_H

```

1   CAGGTGCAG CTGGTGCAG TCTGGGGCT GAGGTGAAG AAGCCTGGG
46  TCCTCAGTG AAGGTTTCC TGCAAGGCA TCTGGAGGC ACCTTCAGC
91  TATTACTGG ATAGAGTGG GTGCGACAG GCCCCTGGA CAAGGGCTT
136 GAGTGGATG GGAGAGATT TTACCTGGA AGTGGTACT ACTAACCCG
181 AATGAGAAG TTCAAGGGC AGAGTCACC ATTACCGCG GACGAATCC
226 ACGAGCACA GCCTACATG GAGCTGAGC AGCCTGAGA TCTGAGGAC
271 ACGGCCGTG TATTACTGT GCGAGAGCG GATTACTAC GGTAGTGAT
316 TACGTCAAG TTTGACTAC TGGGGCCAA GGAACCCTG GTCACCGTC
361 TCCTCA

```

FIG. 9A

7F3com-2H2 V_L

```

1   GACATCCAG ATGACCCAG TCTCCATCC TCCCTGTCT GCATCTGTA
46  GGAGACAGA GTCACCATC ACTTGCAAG GCAAGTCAG CATGTGATT
91  ACTCATGTA ACCTGGTAT CAGCAGAAA CCAGGGAAA GCCCCTAAG
136 CTCCTGATC TATGGGACA TCCTACAGC TACAGTGGG GTCCCATCA
181 AGGTTCAGT GGCAGTGGA TATGGGACA GATTTCACT CTCACCATC
226 AGCAGTCTG CAACCTGAA GATTTTGCA ACTTATTAC TGTCAGCAA
271 TTTTACGAG TATCCTCTC ACGTTCGGC GGAGGGACC AAGGTGGAG
316 ATCAAA

```

FIG. 9B

QVQLVQSGAEVKKPGSSVKVSCKASGGTFSGYWIEWVRQAPGQGLEWMGEI
LPSGGTTNPNEKFKGRVTITADESTSTAYMELSSLRSED TAVYYCARADYYGS
DYVKFDYWGQGTLVTVSS

FIG. 10A

DIQMTQSPSSLSASVGDRVTITCKASQHVGHV VTWYQQKPGKAPKLLIYGTSY
RYSGVPSRFSGSGSGTDFTLTISLQPEDFATYYC QQFYEYPLTFGGGTKVEIK

FIG. 10B

QVQLVQSGAEVKKPGSSVKVSCKASGGTF SYWIEWVRQAPGQGLEWMGEI
LPSGGTTNPNEKFKGRVTITADESTSTAYMELSSLRSED TAVYYCARADYYGS
DYVKFDYWGQGTLVTVSS

FIG. 11A

DIQMTQSPSSLSASVGDRVTITCKASQHVITHV VTWYQQKPGKAPKLLIYGTSY
RYSGVPSRFSGSGSGTDFTLTISLQPEDFATYYC QQFYEYPLTFGGGTKVEIK

FIG. 11B

Accession No. NM_000590

```
1   ccgctgtcaa gatgcttctg gccatgggtcc ttacctctgc cctgctcctg tgctccgtgg
61  caggccaggg gtgtccaacc ttggcgggga tcttggacat caacttcctc atcaacaaga
121 tgcaggaaga tccagcttcc aagtgccact gcagtgctaa tgtgaccagt tgtctctgtt
181 tgggcattcc ctctgacaac tgcaccagac catgcttcag tgagagactg tctcagatga
241 ccaataccac catgcaaaca agatacccac tgattttcag tcgggtgaaa aaatcagttg
301 aagtactaaa gaacaacaag tgtccatatt tttcctgtga acagccatgc aaccaaacca
361 cggcaggcaa cgcgctgaca tttctgaaga gtcttctgga aattttccag aaagaaaaga
421 tgagagggat gagaggcaag atatgaagat gaaatattat ttatcctatt tattaaattt
481 aaaaagcttt ctctttaagt tgctacaatt taaaaatcaa gtaagctact ctaaatacgt
541 atcagttgtg attatttggt taacattgta tgtctttatt ttgaaataaa t
```

FIG. 12

Accession No. A60480

1 mllamvltsa lllcsvagqg cptlagildi nflinkmqed paskchcsan vtscclclgip
61 sdnctrpcfs erlsqmnttt mqtryplifs rvkksvevlk nnkcpyfsce qpcnqttagn
121 altfikslle ifqkekrmrgm rgki

Accession No. NP_000584

1 maellasags acswdfprap psfpppaasr gglggtrsfr phrgaesprp grdrdgvrvp
61 massrcpapr gcrcclpgasl awlgtvllll adwvllrtal prifsllypt alpllrwvav
121 glsrwavlwl gacgvlrattv gsksenagaq gwlaalkpla aalglalpgl alfreliwsg
181 apgsadstrl lhwgshptaf vvsyaaalpa aalwhklgsi wvpggqggsg npvrrllgcl
241 gsetrrlsif lvlvvlsslq emaipfftgr ltdwilqdgq adtftrnltl msiltiasav
301 lefvgdgiyn ntmghvhshl qgevfqavlr qeteffqqnq tgnimsrvte dtstlsdsls
361 enlsflwyl vrglcllgim lwgsvsltmv tlitlplllf lpkkvgkwyq llevqvresl
421 akssqvaiea lsamptvrsf aneegeaqkf reklqeikt1 nqkeavayav nswttsisgm
481 llkvgilysg gqlyvtsgavs sgnlvtfvly qmfftqavev llsiyprvqk avgssekife
541 yldrtprcpp sglltphle glvqfqdvst aypnrpdvlv lqglftlrlp gevtalvgpn
601 gsgkstvaal lqnllyqptgg qllldgkplp qyehrylhrq vaavgqepqv fgrslqenia
661 ygltqkptme eitaaavksg ahsfisglpq gydtevdag sqlsggqrqa valaralirk
721 pcvlildat saldansqlq veqllyespe rysrvllit qhslsveqad hilfleggai
781 reggthqqm ekkgywamv qapadape

Accession No. AAC17735

1 mvltsalllc svagggcptl agildinfli nkmqedpask chcsanvtsc lclgipsdnc
61 trpfcfserls qmtnttmqtr yplifsvkk svevlknnkc pyfsceqpcn qttagnaltf
121 lkslleifqk ekrmrgmrgki

Accession No. NM_002186

```
1 agcagctctg taatgcgctt gtggtttcag atgtgggagg cctgtgtgaa cctgtcgtgc
61 aaagctcacg tcaccaactg ctgcagttat ctccatgaatc aggctgaggg tctttgctgt
121 gcacccagag atagttgggt gacaaatcac ctccaggttg gggatgcctc agacttgtga
181 tgggactggg cagatgcacg tgggaaggct ggaccttggg gagtgaggcc ctgaggcgag
241 acatgggcac ctggctcctg gcctgcacat gcacatgcac ctgtgtctgc ttgggagtct
301 ctgtcacagg ggaaggacaa gggccaaggc ctagaacctt cacctgcctc accaacaaca
361 ttctcaggat cgattgccac tggctctgcc cagagctggg acagggctcc agccctggc
421 tctctctcac cagcaaccag gctcctggcg gcacacataa gtgcactctg cggggcagtg
481 agtgcaccgt cgtgctgcca cctgaggcag tgctcgtgcc atctgacaat ttcaccatca
541 ctttcacaca ctgcatgtct gggaggagc aggtcagcct ggtggaccg gagtacctgc
601 cccggagaca cgttaagctg gaccgcctc ctgacttgca gagcaacatc agttctggcc
661 actgcacact gacctggagc atcagtcctg ccttgaggcc aatgaccaca cttctcagct
721 atgagctggc cttcaagaag cagggaaggc cctgggagca ggcccagcac agggatcaca
781 ttgtcggggg gacctggctt atacttgaag cctttgagct ggaccctggc tttatccatg
841 agggcaggct gcgtgtccag atggccacac tggaggatga tgtggtagag gaggagcggt
901 atacaggcca gtggagttag tggagccagc ctgtgtgctt ccaggctccc cagagacaag
961 gccctctgat cccacctggg ggggtggccag gcaacaccct tgttgctgtg tccatctttc
1021 tectgtgac tggcccgacc tacctcctgt tcaagctgtc gccagggtg aagagaatct
1081 tctaccagaa cgtgccctct ccagcgatgt tcttcagcc cctctacagt gtacacaatg
1141 ggaacttcca gacttgatg ggggcccacg gggccgggtg gctgttgagc caggactgtg
1201 ctggcaccac acaggagacc ttggagccct gcgtccagga ggccactgca ctgctcactt
1261 gtggcccagc gcgtccttgg aaatctgtgg ccctggagga ggaacaggag ggccctggga
1321 ccaggctccc ggggaacctg agctcagagg atgtgctgcc agcagggtgt acggagtggg
1381 gggtaeagac gcttgcttat ctgccacagg aggactgggc cccacgtcc ctgactaggc
1441 cggctccccc agactcagag ggcagcagga gcagcagcag cagcagcagc agcaacaaca
1501 acaactactg tgccttgggc tgctatgggg gatggcaect ctcagccctc ccaggaaaca
1561 cacagagctc tgggcccac ccagccctgg cctgtggcct ttcttgtgac catcaggggc
1621 tggagaccca gcaaggagtt gcctgggtgc tggctgggtc ctgccagagg cctgggctgc
1681 atgaggacct ccagggcagt ttgctccctt ctgtcctcag caaggctcgg tctggacat
1741 tctaggtccc tgaactgcca gatgcacat gtccattttg ggaaaatgga ctgaagtctt
1801 tggagccctt gtctgagact gaacctcctg agaaggggcc cctagcagcg gtcagaggtc
1861 ctgtctggat ggaggctgga ggetcccccc tcaaccctc tgctcagtc ctgtggggag
1921 cagcctctac cctcagcacc ctggccacaa gttcttctt ccattgtccc tttcttttat
1981 ccctgaectc tctgagaagt ggggtgtggg ctctcagctg ttctgcctc atacccttaa
2041 agggccagcc tgggcccagt ggacacaggg aaggcaccat gaccacctg tgtgacctct
2101 ctgtgcctta ctgaggcac tttctagaga ttaaagggg cttgatggct gttaaaaaaa
2161 aaaaaaaaaa a
```

FIG. 14A

Accession No. NM_176786

```

1  agcagctctg taatgcgctt gtggtttcag atgtgggagg cctgtgtgaa cctgtcgtgc
61 aaagctcacg tcaccaactg ctgcagttat ctctgaatc aggcagaggg tctttgtgtg
121 gcacccagag atagtgggtg gacaaatcac ctccaggttg gggatgcctc agacttgtga
181 tgggactggg cagatgcata tgggaagtaa ctgctgcaag aacggacaga cactgctgca
241 gagaacttgc cagggtgttt catgctgtgg ctggtggttc caggctgcac gctccattct
301 aggaaagggg ccctcagccc agtcccttgc aggcctggacc ttggagagtg aggccctgag
361 gcgagacatg ggcacctggc tcctggcctg catctgcata tgcacctgtg tctgcttggg
421 agtctctgtc acaggggaag gacaagggcc aaggctctaga acctcacct gctccacaa
481 caacattctc aggatcgatt gccactggtc tgcccagag ctgggacagg gctccagccc
541 ctggctcctc ttcaccaggc tcctggcggc acacataagt gcattctgag gggcagttag
601 tgcaccgtcg tgcctgccacc tgaggcagtg ctgctgccat ctgacaattt caccatcact
661 ttccaccact gcatgtctgg gagggagcag gtcagcctgg tggaccggga gtacctgccc
721 cggagacacg agcaacatca gttctggcca ctgcatcctg acctggagca tcagtctgac
781 cttggagcca atgaccacac ttctcagcta tgagctggcc ttcaagaagc aggaagaggc
841 ctgggagcag gccagacaca gggatcacat tgcgggggtg acctggctta tacttgaagc
901 ctttgagctg gacctgggtt ttatccatga ggccaggctg cgtgtccaga tggccacact
961 ggaggatgat gtggttagagg aggagcgtta tacaggccag tggagttagt ggagccagcc
1021 tgtgtgcttc caggctcccc agagacaagg ccctctgate ccacctggg ggtggccagg
1081 caacaccctt gttgctgtgt ccattcttct cctgctgact ggcccgacct acctcctgtt
1141 caagctgtcg cccagacttg gatggggggc cacggggccg gtgtgctgtt gaggccaggac
1201 tgtgctggca cccacagggt agccttgagg ccctgctgcc aggaggccac tgcactgctc
1261 acttggtggc cagcgcgtcc ttggaaatct gtggccctgg aggaggaaca ggagggccct
1321 gggaccagge tcccggggaa cctgagctca gaggatgtgc tgccagcagg gtgtacggag
1381 tggagggtac agacgcttgc ctatctggca caggaggact gggccccac gtccctgact
1441 aggccggtc cccagactc agagggcagc aggaacagca gcagcagcag cagcagcaac
1501 aacaacaact actgtgcctt gggctgctat gggggatggc acctctcagc cctcccagga
1561 aacacacaga gctctgggccc catcccagcc ctggcctgtg gcctttcttg tgaccatcag
1621 ggcctggaga cccagcaagg agttgcctgg gtgctggctg gtcactgeca gaggcctggg
1681 ctgcatgagg acctccaggg catgttgctc ccttctgtcc tcageaaggc tcggtcctgg
1741 acattctagg tccctgactc gccagatgca tcatgtccat tttgggaaaa tggactgaag
1801 tttctggagc cctgtcttga gactgaacct cctgagaagg ggcctctagc agcggtcaga
1861 ggtcctgtct ggatggaggc tggaggctcc cccctcaacc cctctgtctc gtgcctgtgg
1921 ggagcagcct ctacctcag catcctggcc acaagttctt ccttccattg tccctttct
1981 ttatccctga cctctctgag aagtgggggtg tggctctctc gctgttctgc cctcatacc
2041 ttaaaggggc agcctgggccc eagtgggacac aggttaaggca ccatgaccac ctggtgtgac
2101 ctctctgtgc cttactgagg cacctttcta gagattaaaa ggggcttgat ggctgttaaa
2161 aaaaaaaaaa aaaaa

```

FIG. 14B

Accession No. NM_000206

```
1 gaagagcaag cgccatgttg aagccatcat taccattcac atccctctta ttcctgcagc
61 tgccccctgct gggagtgggg ctgaacacga caattctgac gcccaatggg aatgaagaca
121 ccacagctga tttcttcttg accactatgc ccactgactc cctcagtgtt tccactctgc
181 ccctcccaga gggttcagtgt tttgtgttca atgtcgagta catgaattgc acttggaaca
241 gcagctctga gccccagcct accaacctca ctctgcatta ttggtacaag aactcggata
301 atgataaagt ccagaagtgc agccactatc tattctctga agaaatcact tctggctgtc
361 agttgcaaaa aaaggagatc cacctctacc aaacatttgt tggtcagctc caggaccac
421 gggaaccag gagacaggcc acacagatgc taaaactgca gaatctgggtg atccctggg
481 ctccagagaa cctaacactt cacaactga gtgaatccca gctagaactg aactggaaca
541 acagattctt gaaccactgt ttggagcact tgggtcgagta ccggactgac tgggaccaca
601 gctgggactga acaatcagtg gattatagac ataagttctc cttgcctagt gtggatgggc
661 agaaacgcta cacgtttcgt gttcggagcc gctttaaccc actctgtgga agtgctcagc
721 attggagtga atggagccac ccaatccact gggggagcaa tacttcaaaa gagaatcctt
781 tcctgtttgc attggaagcc gtggttatct ctggtggctc catgggattg attatcagcc
841 ttctctgtgt gtatttctgg ctggaacgga cgatgccccg aattcccacc ctgaagaacc
901 tagaggatct tgttactgaa taccacggga acttttcggc ctggagtggg gtgtctaagg
961 gactggctga gagtctgcag ccagactaca gtgaacgact ctgcctcgtc agtgagattc
1021 cccaaaagg aggggccctt ggggaggggc ctggggcctc cccatgcaac cagcatagcc
1081 cctactgggc cccccatgt tacaccctaa agcctgaaac ctgaacccca atcctctgac
1141 agaagaacc cagggtcctg tagcctaag tggtaactaac tttccttcat tcaaccacc
1201 tgcgtctcat actcacctca cccactgtg gctgatttgg aatttttgtg ccccatgtaa
1261 gcaccccttc atttggcatt cccacttga gaattacct tttgccccga acatgttttt
1321 cttctccctc agtctggccc ttccttttcg caggattctt cctccctccc tctttccctc
1381 ccttctctt tccatctacc ctccgattgt tctgaaccg atgagaaata aagtttctgt
1441 tgataatcat c
```

FIG. 14C

Accession No.: NP_002177

```

1 mglgrciweg wtleasealrr dmgtwillaci cictcvclgv svtgegggpr srtftcltnn
61 ilridchwsa pelgggsspw llftsnqapg gthkcilrgs ectvvlppea vlvpsdnfti
121 tfhhcmssgre qvslvdpeyl prrhvkl DPP sdlsnissg hciltwsisp alepmttlls
181 yelafkkqee aweqaqhrdh ivgvtwlile afeldpgfih earlrvqmat leddvveeer
241 ytgqwseswq pvcfqapqrq gplippwgpw gntlvavsif llltgptyll fkl sprvkri
301 fyqnvpspam ffqplysvhn gnfqtwmgah gagvllsqdc agtpggalep cvqeataallt
361 cgparpwksv aleeeqegpg trlpgnlsse dvlpagctew rvqtlaylpq edwaptsltr
421 pappdsegr sssssssnn nnycalgcyg gwhtsalpgn tqssgpipal acglscdhqg
481 letqgvawv laghcqrpgl hedlqgmllp svlskarswt f

```

Accession No.: NP_789743

```

1 mhlgsncckn gqtlqrctch gvscgwwfq aarsilgkpp saqslagwtl esealrrdmg
61 twllacicic tcvcclgsvt gegggprsrtr fcltnnilr idchwsapel gggsspwllf
121 trllaahisa scgavsapsc chlrrqcschl tispslstta clggsrsaww trstcpgdts
181 nissghcilt wsispalepm ttllsyelaf kkqeeawega qhrdhivgt wlileafeld
241 pgfihearlr vqmatleddv veeerytgqw sewsqpycfq apqrqgplip pwgwpngntlv
301 avsifllltg ptyllfklsr rlgwgtgppv cc

```

Accession No.: NP_000197

```

1 mlkpslpfts llflqlpllq vglnttiltp ngnedttadf flttmptdsl svstlplpev
61 qcfvfnveym nctwnsssep qptnltilhyw yknsdndkvq kcshylfsee itsgcqlqkk
121 eihlyqtfvv qlqdprrr qatqmlklqn lvipwapenl tlhklseql elnwnnrfln
181 hclehlvqyr tdwdhswteq svdyrhkfsl psvdgqkryt frvrsrfrnpl cgsaqhwsew
241 shpihwgsnt skenpflfal eavvisvgsm gliisllcvy fwlermpri ptlknledlv
301 teyhgnfsaw sgvskglaes lqpdysrcl lvseippkkg algegpgasp cnqhsapywap
361 pcytlkpet

```

FIG. 15

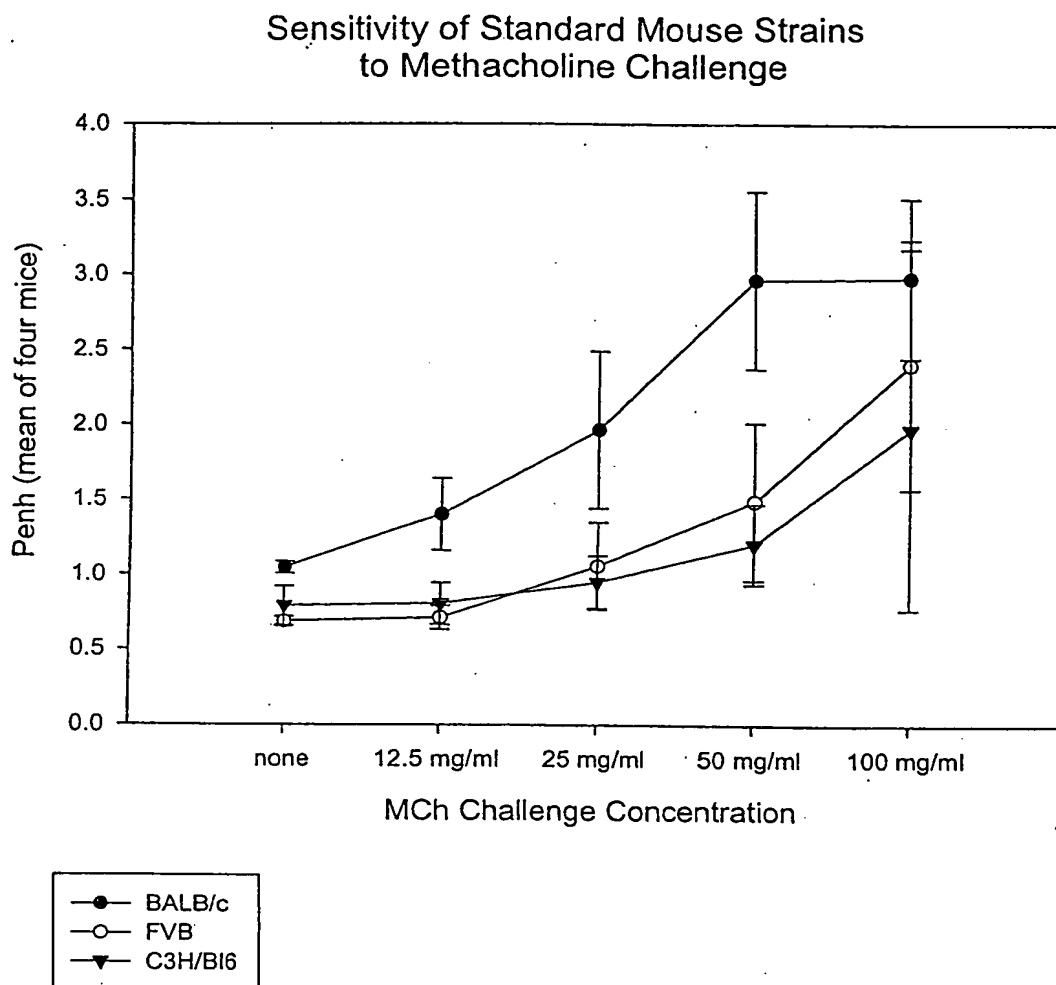


FIG. 16

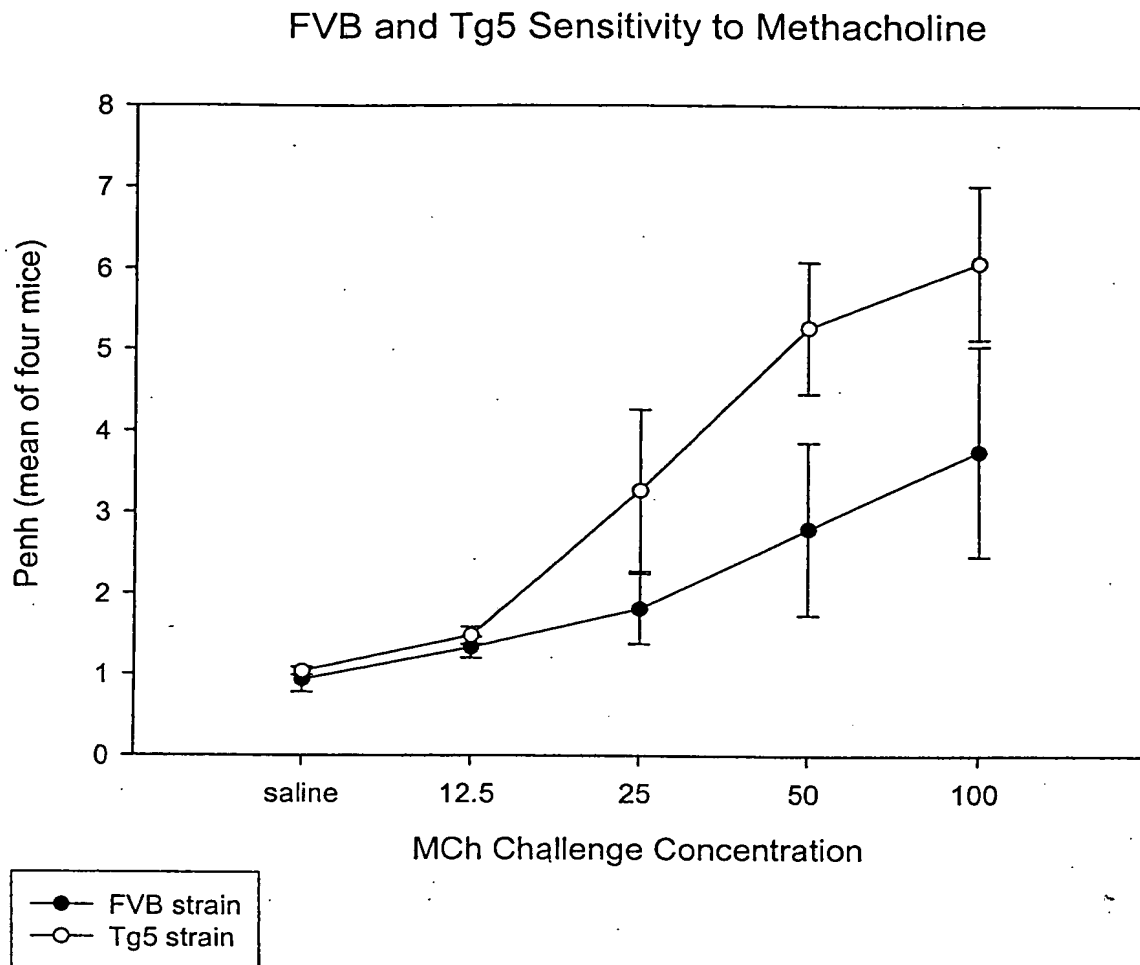


FIG. 17

IL-9 Effects on Penh in BALB/c Mice

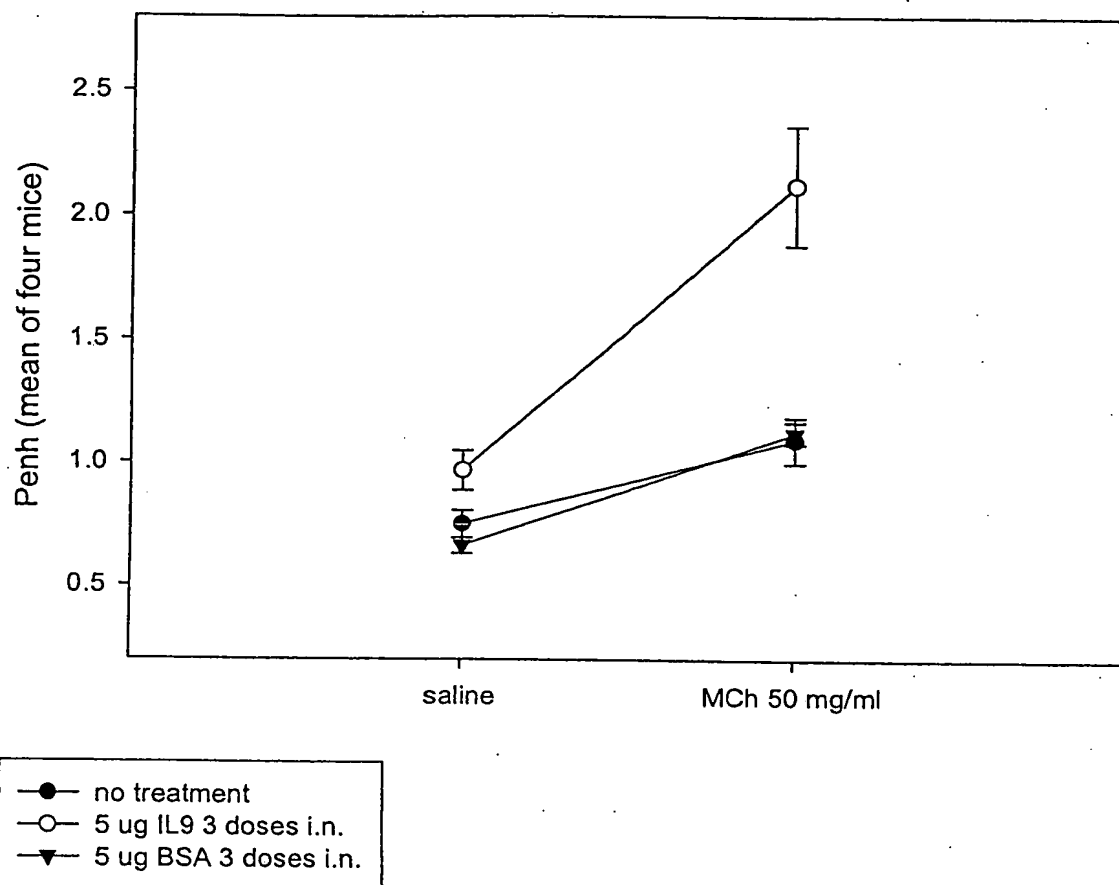


FIG. 18A

IL-9 Effects on Penh in C57Bl/6 Mice

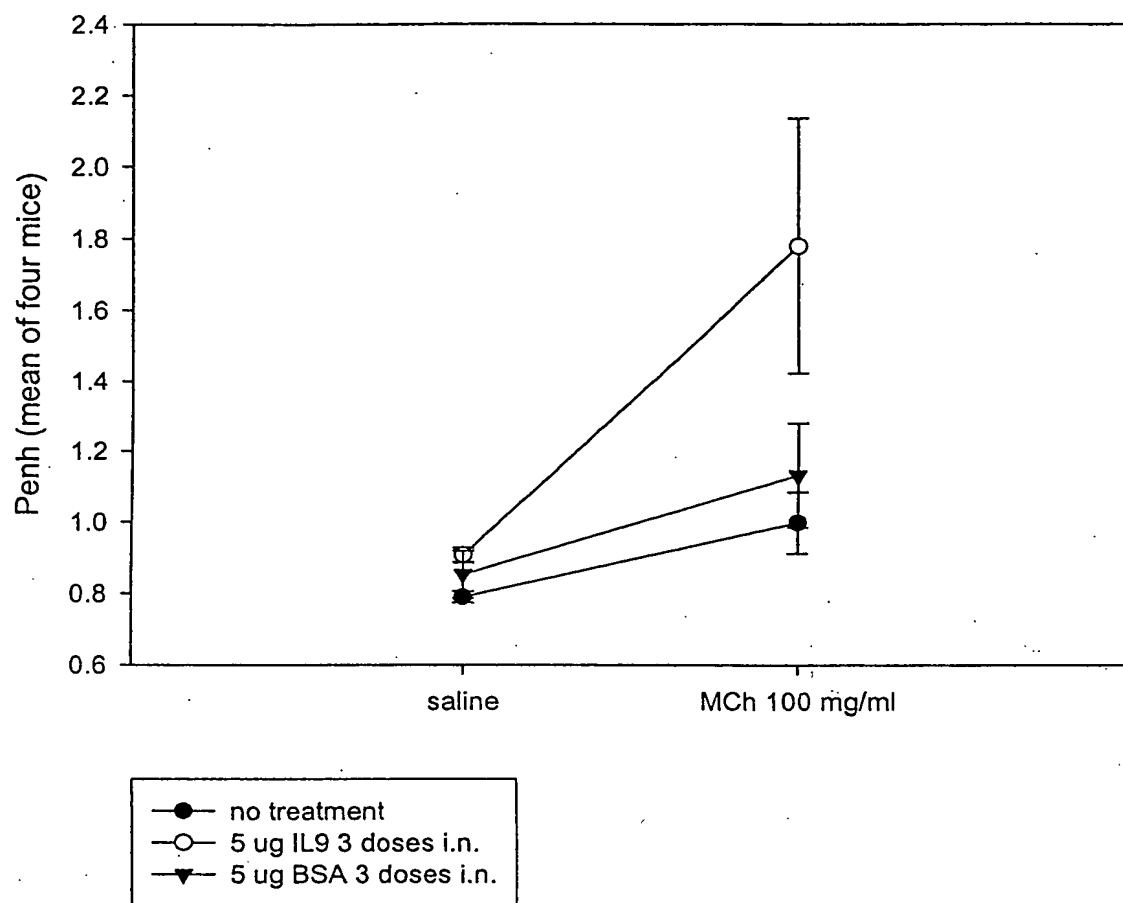


FIG. 18B

D93 Effects on AHR in BALB/c Mice

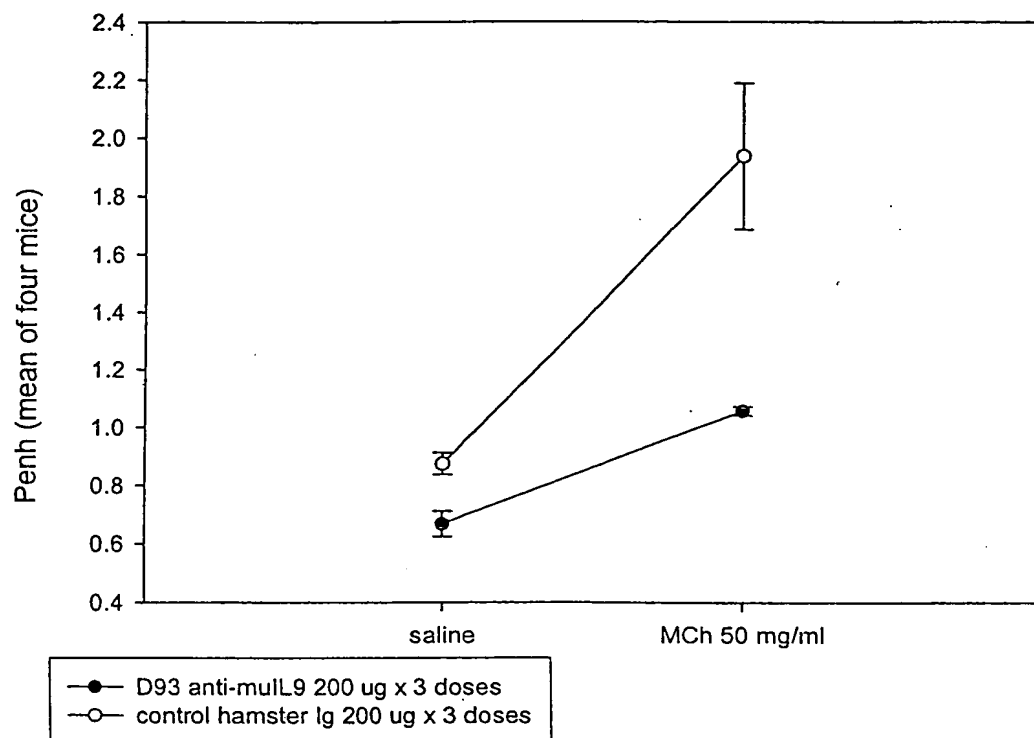


FIG. 19

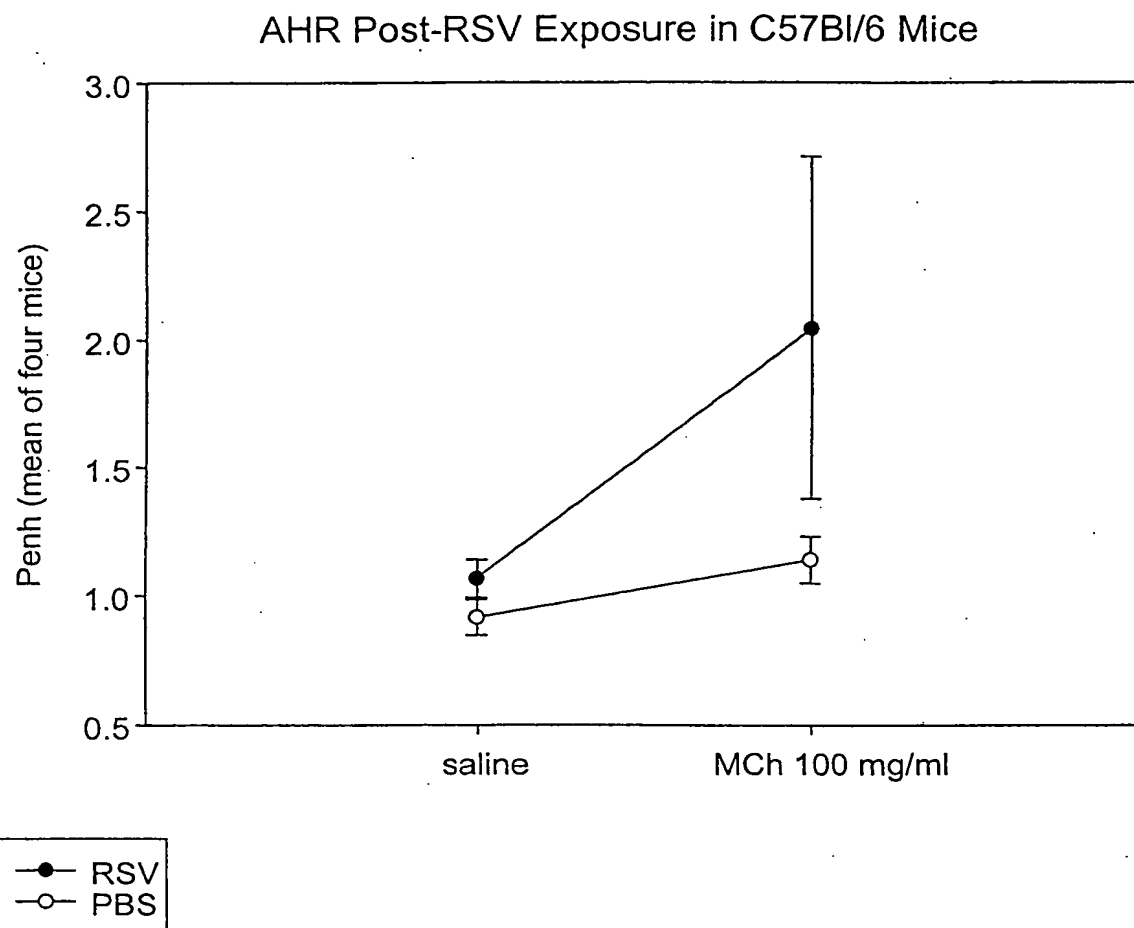


FIG. 20